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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/088,114

07/18/2002

Hiroshi Inoue

NIP-275

8078

24956

7590

02/25/2004

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EXAMINER

BELENA, JOHN F

ART UNIT

PAPER NUMBER

3746

DATE MAILED: 02/25/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/088,114

Applicant(s)

INOUE ET AL.

Examiner

John F. Belena, Ph.D.

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-6,12,13,15 and 16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4 and 7 is/are rejected.
- 7) ☒ Claim(s) 2,3,5,6,12,13,15 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

*United States Patent & Trademark Office*

**DETAILED ACTION**

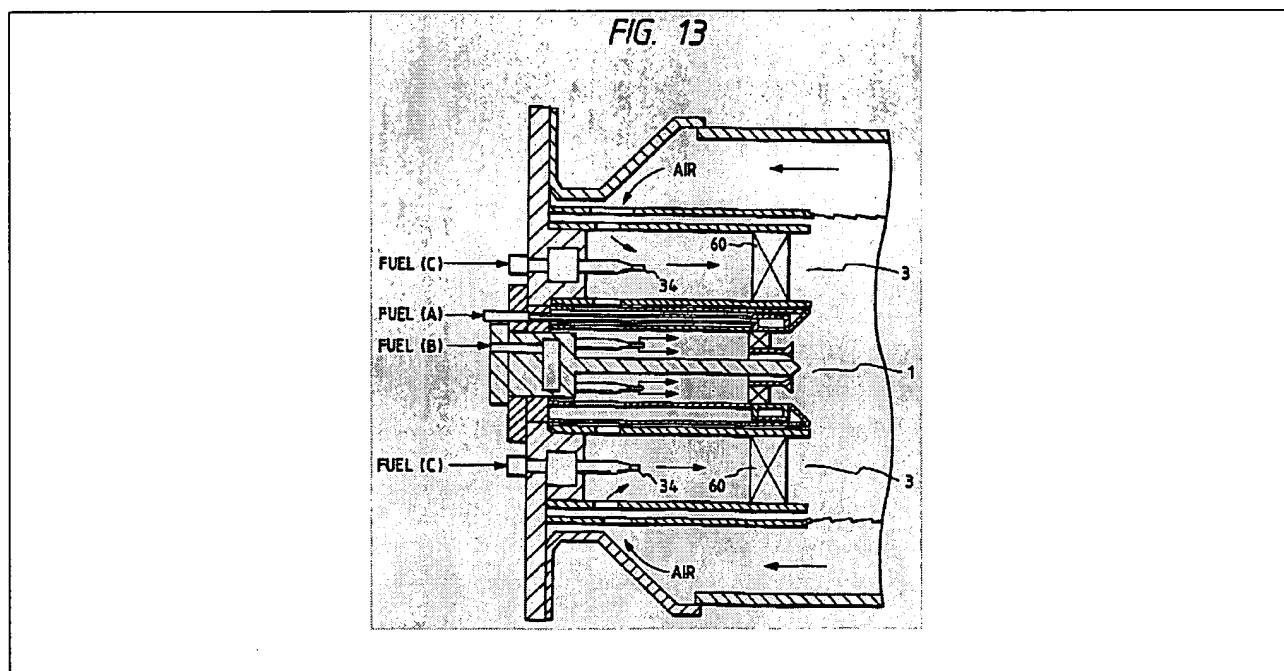
**CLAIM REJECTIONS - 35 USC § 102**

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

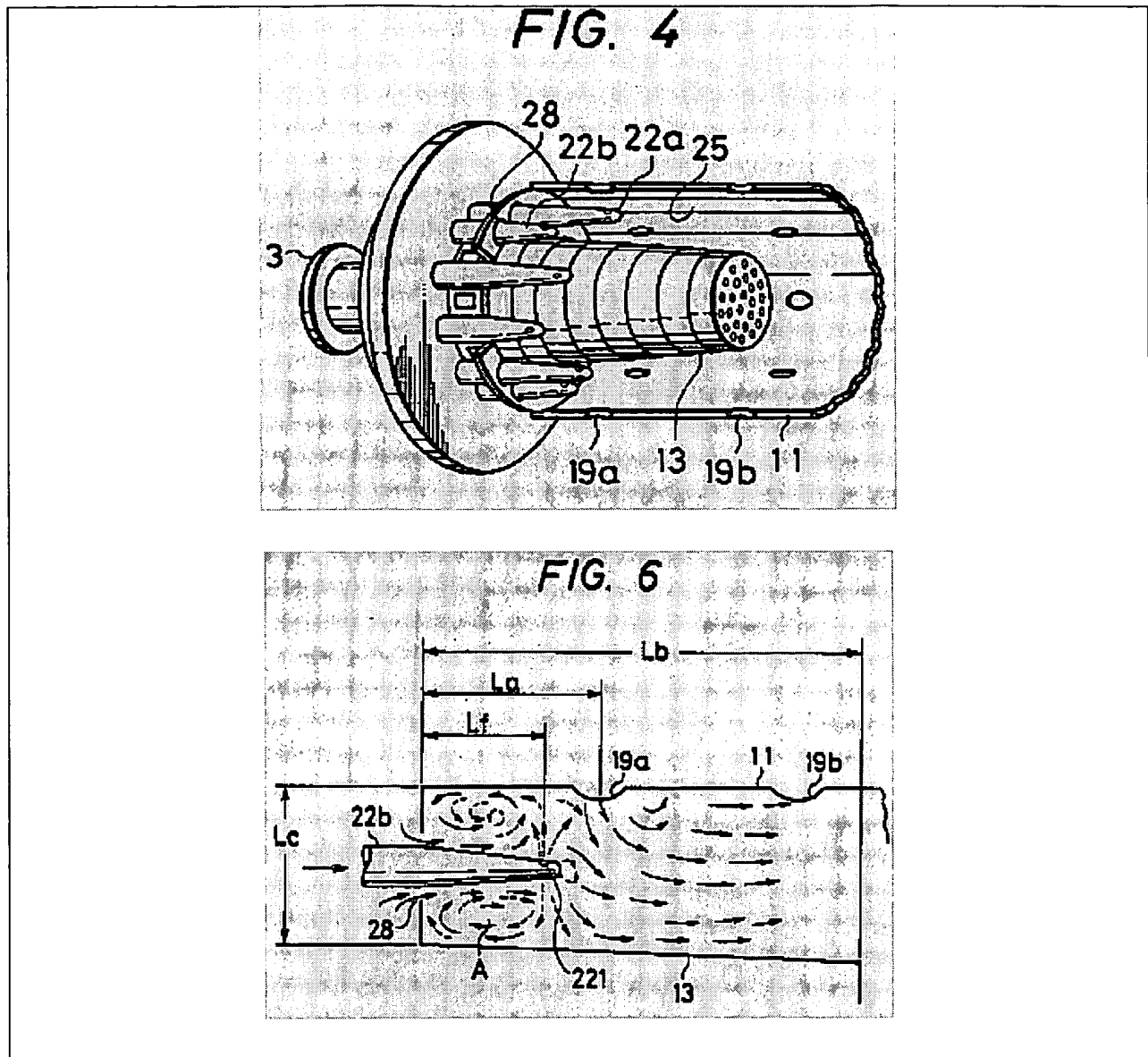
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 12 & 15 are rejected under 35 U.S.C. 102(b) as being anticipated by (5,660,045) to Ito et al.



Ito et al., Figure 13 as displayed above discloses according to applicant's **claims 1, 12 & 15**, a gas turbine combustor comprising diffusive combustion nozzles {inner ring of fuel B fed nozzles} which inject fuel and air into a combustion chamber and form a diffusive combustion flame, outer {next to air leader line connected to (60)} and inner {next to reference sign (34)} walls which form an annular premixing flow passage {framed by (60)} and premixing nozzles (34) which are disposed in the premixing flow passage and form a premixing combustion flame by injecting premixed gas formed by premixing fuel and air into the combustion chamber, characterized in that a plurality of the premixing nozzles (34) are arranged in the premixing flow passage {framed by (60)}; a plurality of spaced openings permitting air to flow in are provided at the outer wall {air inlets near to flow arrows labeled AIR with at least one for every adjacent two premixing nozzles (34)} so that the air flowed into the premixing flow passage forms swirling flow with respect to the premixing nozzles (34) {it is a well known engineering fact that flows negotiate openings where vortices (swirls) are generated, See (JP-08135969) to Yoshida et al., Figure 4 as an example of swirls formed around openings}; and the opening are disposed in circumferential direction and are provided one for every adjacent two premixing nozzles (34). See Ito et al., Figures 1-15, and respective portions, abstract, col. 11 lines 49-65 of the detailed description.

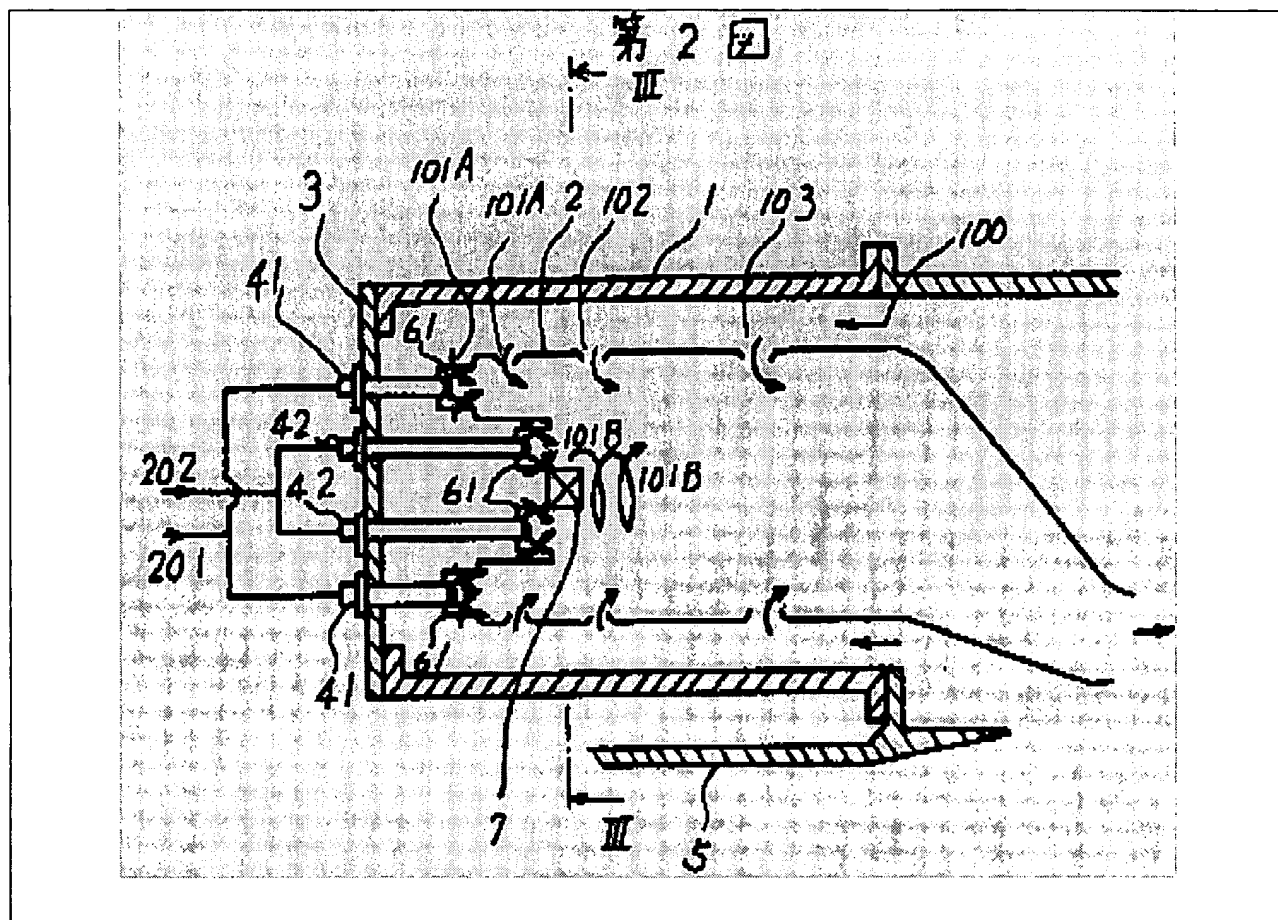
3. Claims 1, 2, 3, 4, 5, 12, 13, 15 & 16 are rejected under 35 U.S.C. 102(b) as being anticipated by (4,898,001) to Kuroda et al.

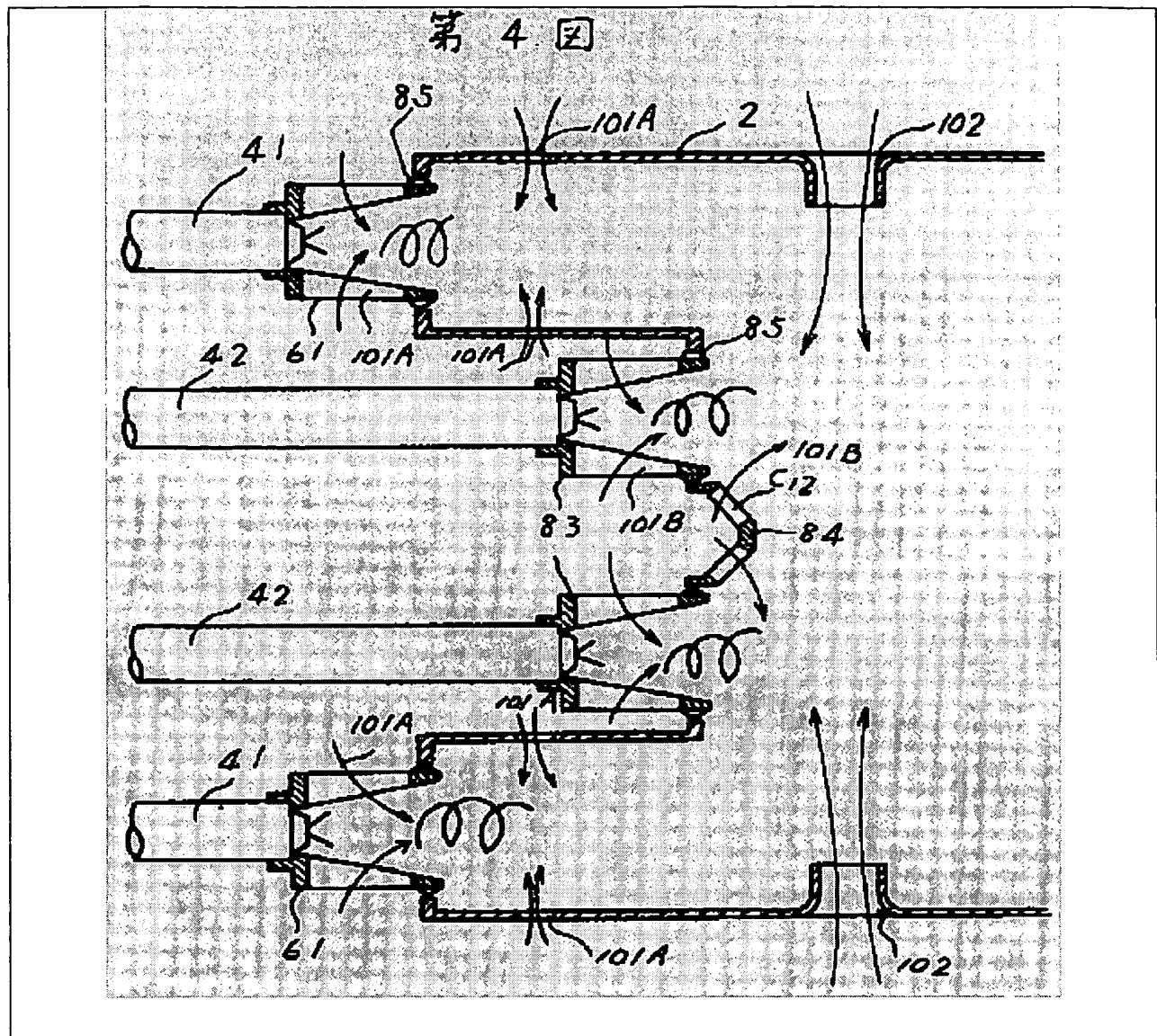


Kuroda et al., Figures 4 & 6 as immediately displayed above discloses according to applicant's claims 1, 2, 3, 4, 5, 12, 13, 15 & 16, a gas turbine combustor comprising diffusive combustion nozzles {See Fig. 4, inner ring of fuel fed nozzles (22b)} which

inject fuel and air into a head combustion chamber (11) and form a diffusive combustion flame, outer (11) and inner (13) walls which form an annular premixing flow passage (Lc) and premixing nozzles (22b) which are disposed in the premixing flow passage (Lc) and form a premixing combustion flame by injecting premixed gas formed by premixing fuel and air {as in (A)} into the combustion chamber (11) {as seen in flow arrows near numeral (13)}, characterized in that a plurality of the premixing nozzles (22b) are arranged in the premixing flow passage; a plurality of spaced openings (19a) which vary along axial direction of head combustion chamber (11) permitting air to flow in are provided at the outer wall so that the air flowed into the premixing flow passage {(Lc), (Lf)} forms swirling flow (A) with respect to the premixing nozzles (22b); means for forming the swirling flows is the construction of the head combustion chamber [(11), (13), (22b)] with the nozzle positions and the opening (19a) are disposed in circumferential direction and are provided one for every adjacent two premixing nozzles (22b). The flows (A) above and beneath premixing nozzles (22b) are counter-rotating and hence there are swirling flows adjacent tow nozzles rotating in opposite directions. See Kuroda et al., Figures 2-7, and respective portions, abstract, col. 5 lines 15-68, col. 6 lines 1-40 and col. 11 lines 15-20 of the detailed description.

4. Claims 1, 4, 5, 12, 15 is rejected under 35 U.S.C. 102(b) as being anticipated by (JP-355046309-A) to Kusaba et al.





Kusaba et al., Figures 2 & 4 as immediately displayed above discloses according to applicant's claims 1, 4, 5, 12, 15 a gas turbine combustor (1) comprising diffusive combustion nozzles {inner ring of fuel fed nozzles (42)} which inject fuel and air into a combustion chamber (2) and form a diffusive combustion flame, outer {(2), (61)} and inner {containing (101A) next to (42)} walls which form an annular premixing flow



passage {inline with (41)} and premixing nozzles (41) which are disposed in the premixing flow passage and form a premixing combustion flame by injecting premixed gas formed by premixing fuel and air into the combustion chamber (2), characterized in that a plurality of the premixing nozzles (41) are arranged in the premixing flow passage {inline with (41)} openings (101A) permitting air to flow in are provided at the outer wall {(2), (61)} so that the air flowed into the premixing flow passage forms swirling flow with respect to the premixing nozzles (41); and the openings {at least one (101A) encompassing every two nozzles (41)} are disposed in circumferential direction and are provided {at least} one for every adjacent two premixing nozzles (41). The openings (101A) adjacent (41) vary in axial direction along combustor axis. See Kusaba et al., Figures 2 & 4 and English abstract.


**\*\*The claims were examined with the broadest reasonable interpretation of the claimed structural/functional subject matter. A proper and acceptable response to this office action requires addressing all issues/objections/rejections invoked in this office action.\*\***

### ***ALLOWABLE SUBJECT MATTER***

5. Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### CONCLUSION

6. Any inquiry concerning this communication from the examiner should be directed to **John F. Belena, Ph.D.** whose telephone number is (703) 305-3533. The examiner can normally be reached on Monday through Thursday from 9:00 AM to 5:00 PM. The examiner can also be reached on alternate Fridays from 9:00 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the **examiner's supervisor, Timothy S. Thorpe**, can be reached on (703) 308-0102. The fax number for this Group Art Unit 3746 is (703) 872-9302. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group Art Unit 3746 receptionist whose telephone number is (703) 308-0861.

  
\_\_\_\_\_  
*John F. Belena, Ph.D.*  
*Group Art Unit 3746*

  
**JUSTINE YU**  
**SUPERVISORY PATENT EXAMINER**

2/21/04

2/20/04